



Information Science and Technology Center Seminar



**Professor Christian Reidys
Center for Combinatorics
Nankai University**

"Robustness and Plasticity in RNA"

Wednesday, April 21, 2010

3:00 - 4:30 PM

TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: The folding of RNA sequences into RNA structures can be viewed as an abstract mapping. This mapping exhibits remarkable properties with respect to evolutionary optimization of sequences via local point-mutations. In this talk we discuss some of these properties in detail using the combinatorially nontrivial RNA pseudoknot structures and RNA RNA interaction complexes as an example. We show how the existence of an ensemble of phenotypes can be used for localizing interaction regions and that RNA pseudoknot structures have vast percolating neutral networks in sequence space facilitating (neutral) evolution.

Biography: Prof. Reidys is currently professor of mathematics at Nankai university, where he is deputy director of the Center for Combinatorics. He received his PhD in probability and graph theory 1995 at the university of Jena, Germany. From 1996 until 2006 he worked for LANL in CS division and he accepted 2007 an offer from Nankai University. This talk summarizes parts of the work of Prof. Reidys research group at the Center for Combinatorics from 2007 until 2010, for which E.Y. Jin and he received 2008 the Lee Segel price of the SMB and he was awarded 2009 the Changjiang scholar prize in mathematics.